CLAIMS

We claim:

1. A computer system for providing one or more visualizations to one or more users, the system comprising

one or more central processing units (CPUs), one or more memories, and one or more network interfaces to one or more networks;

a sessionization process that receives one or more Web server logs from one or more online stores, and generates one session table for each session found from requests recorded in Web server logs;

a shopping step finder process that receives one or more session tables, and generates one micro-conversion table for each given session table; and

a visualization process that receives one or more micro-conversion tables, and generates one or more micro-conversion visualizations of one or more micro-conversions.

2. A system, as in claim 1, where the Web server log includes one or more Web page request records.

3. A system, as in claim 2, where the Web page request record comprises a timestamp that is the system-generated time when the request is made, a user ID that is a unique number identifying the user who made the request, a session ID that is a unique number identifying the session which made the request, a referrer that is the Web page the session sees immediately before making this

5   request, a current page that is the Web page requested, and a group of hyperlinks that is contained in the current page.

4. A system, as in claim 1, where the session table includes one or more Web page request records with all the session ID values in a session table being the same.

10   5. A system, as in claim 1, where the micro-conversion table comprises shopping steps in an online store and product entries for each shopping step.

6. A system, as in claim 5, where the shopping steps include a product impression that is the view

15   of hyperlink to a Web page presenting a product and/or a service, a clickthrough that is the click on the hyperlink and view of the Web page of the product and/or service, a basket placement that is the placement of the item in the shopping basket, and a purchase that is the purchase of the item and the completion of the transaction.

20   7. A system, as in claim 5, where the product or service entry comprises a product or service ID that is a unique number identifying the product or service, and a timestamp when the corresponding shopping activity happens.

8. A system, as in claim 1, where the micro-conversion visualization comprises a traditional parallel coordinate system and one or more extension components.

9. A system, as in claim 8, where the traditional parallel coordinate system is a parallel coordinate system comprising a series of parallel lines that are placed equidistantly, each parallel line being assigned a specific dependent variable and dependent variable values being plotted along the respective axis, and an independent variable that is represented by polygonal lines connecting the corresponding dependent variable values (also referred to as data points) and illustrating a relationship between an independent variable and the dependent variables appearing on each axis.

10. A system, as in claim 8, where the extension components include one or more parallel axes of sequential events, one or more dependent variable values of timestamps, one or more dropouts of polygonal lines, one or more filters, one or more categorizers,, and one or more hyperlink association.

11. A system, as in claim 10, where the parallel axes of sequential events is an assignment of a series of sequential events to parallel lines in a parallel coordinate system.

12. A system, as in claim 11, where the sequential events include one or more steps of shopping in one or more stores, and one or more product or service development steps.

13. A system, as in claims 10, where the dependent variable values of timestamps is an assignment of timestamp values as data points to a series of sequential events that are assigned to the equal number of parallel axes in a parallel coordinate system.

5   13. A system, as in claims 10, where the dropout of a polygonal line is disappearance of a polygonal line before the line reaches the last parallel axis in a parallel coordinate system with the parallel axes of sequential events.

14. A system, as in claim 10, where the filter is a means to select and/or de-select one or more groups of polygonal lines viewed in a parallel coordinate system.

15. A system, as in claim 10, where the categorizer is a parallel axis in a parallel coordinate system whose purpose is to categorize polygonal lines in the system.

16. A system, as in claim 15, where the categorizer includes one or more of the following: the referrer Web sites of sessions, the ISPs (Internet Service Providers) of sessions, the lengths of sessions, the methods used to find product or service information by sessions, the geographic regions where sessions come from, the ages, sex, education levels, and income levels of the owners of sessions, the sales history of the owners of sessions, the Web page patterns accessed by

20   sessions or by the owners of sessions, either or not ordered by session, or by time.

17. A system, as in claim 10, where the hyperlink association is the association of one or more hyperlinks with the polygonal line representing a session, clicking on the polygonal line opens a Web page delivering detail information of the session.

5   18. A method for visually analyzing clickstream data comprising the steps of

receiving one or more Web server logs from one or more online stores' Web server systems;

generating one or more session tables from the given Web server log(s);

10   generating one or more micro-conversion tables from the generated session table(s);

generating one or more micro-conversion visualizations from the generated micro-conversion tables; and

15   interactively generating one or more variations of the generated micro-conversion visualizations upon interactive requests from one or more users.

19. A computer system for visually analyzing clickstream data comprising:

20   means for receiving one or more Web server logs from one or more online stores' Web server systems;

means for generating one of more session tables from the given Web server log(s);

means for generating one or more micro-conversion tables from the generated session table(s);

5   means for generating one or more micro-conversion visualizations from the generated

micro-conversion tables; and

means for interactively generating one or more variations of the generated micro-conversion

visualizations upon interactive requests from one or more users.

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